

What is Claimed is:

1. A method of collecting data about a plurality of samples that possess characteristics that change over time, the samples being contained in an array of containers that are arranged in a container spatial relationship, the method comprising:

5 displaying a matrix of cells in a cell spatial relationship that corresponds to the container spatial relationship; and

accepting user input into at least one of the cells of the matrix that is displayed, of at least one value of at least one of the characteristics that change over time for at least one of the samples that corresponds to the at least one of the cells in the matrix that is displayed.

10

2. A method according to Claim 1 wherein the accepting is followed by: storing in a database, the at least one value of the at least one of the characteristics that change over time for the at least one of the samples.

15

3. A method according to Claim 1 wherein the array of containers includes a plurality of rows and columns of containers in a container spatial relationship and wherein the matrix of cells includes a corresponding plurality of rows and columns of cells in a cell spatial relationship that corresponds to the container spatial relationship.

20

4. A method according to Claim 1 wherein the plurality of samples are contained in a plurality of arrays of containers and wherein the displaying is preceded by:

25 accepting user selection of an array of containers from the plurality of arrays of containers.

5. A method according to Claim 1 wherein the displaying is preceded by: accepting user selection of a characteristic from the characteristics that change over time; and

30 wherein the displaying comprises displaying a matrix of cells in a cell spatial relationship that corresponds to the container spatial relationship and that includes data entry parameters for the characteristic that was selected.

6. A method according to Claim 5 wherein the data entry parameters comprise at least one of a yes/no selection, a data entry box and a pull down menu of selection options.

5 7. A method according to Claim 5 wherein the accepting user selection of a characteristic is followed by displaying user instructions for obtaining a value of the characteristic that was selected.

8. A method according to Claim 1:
10 wherein the accepting user input comprises accepting user input of a default value of the at least one of the characteristics for the cells of the matrix that is displayed, and accepting user input into at least one of the cells of the matrix that is displayed, of at least one value that is different from the default value.

15 9. A method according to Claim 2:
wherein the accepting user input comprises accepting user input of a default value of the at least one of the characteristics for the cells of the matrix that is displayed, and accepting user input into at least one of the cells of the matrix that is displayed of at least one value that is different from the default value; and
20 wherein the storing comprises storing in the database, the default value for the cells of the matrix except for the at least one of the cells in which the at least one value that is different from the default value was accepted, and storing in the database, the at least one value for the at least one of the cells.

25 10. A method according to Claim 2 wherein the following is performed between the accepting and the storing:
accepting user input into at least one of the cells of the matrix that is displayed, of at least one corrected value of at least one of the characteristics that change over time for at least one of the samples that corresponds to the at least one of
30 the cells in the matrix that is displayed.

11. A method according to Claim 1 wherein the displaying and accepting are repeatedly performed to collect data for a plurality of matrices of cells that correspond to a plurality of arrays of containers.

12. A method according to Claim 1 wherein the displaying and accepting are repeatedly performed to collect data for a plurality of the characteristics that change over time.

5

13. A method according to Claim 1 wherein the displaying and accepting are repeatedly performed to collect data over a plurality of sequential time intervals.

14. A method according to Claim 1 wherein the displaying is preceded by:
10 storing in a database, a plurality of past values of the characteristics of the plurality of samples that were data collected during at least one past time interval;
storing in a rule base, a plurality of rules that determine whether a characteristic of a sample is to be data collected and, if so, that identify the characteristic which is to be data collected, based on values of characteristics of
15 samples;

applying the plurality of rules to the plurality of past values that are stored in the rule base to identify target samples to be data collected from the plurality of samples and to identify at least one target characteristic to be data collected for the target samples that are identified; and
20 wherein the displaying comprises displaying the matrix of cells for the at least one target characteristic to be data collected in the target samples to be data collected.

15. A method according to Claim 14 wherein the displaying is followed by:

25 accepting user input of at least one value of the at least one target characteristic to be data collected in the target samples to be data collected; and
storing in the database, the at least one target value of the at least one target characteristic to be data collected in the target samples to be data collected.

30 16. A method according to Claim 15 wherein the applying, displaying, accepting and storing the at least one value are repeatedly performed in sequence during a plurality of time intervals.

17. A method according to Claim 14 wherein the plurality of rules include a rule that begins or terminates data collection of a characteristic in a sample based on a percentage of the samples having a value of the characteristic during a past time interval.

5

18. A method according to Claim 14 wherein the plurality of rules include a rule that begins or terminates data collection of a first characteristic in a sample based on a percentage of the samples having a value of a second characteristic during a past time interval.

10

19. A method according to Claim 14 wherein the plurality of rules include a rule that begins or terminates data collection of a characteristic in a sample based on a percentage of the samples failing to have the characteristic during a past time interval.

15

20. A method according to Claim 14 wherein the plurality of rules include a rule that begins or terminates data collection of a first characteristic in a sample based on a percentage of the samples failing to have a second characteristic during a past time interval.

20

21. A method of scheduling data collection of characteristics of a plurality of samples, wherein values of the characteristics change over time, the method comprising:

25 storing in a database, a plurality of past values of the characteristics of the plurality of samples that were data collected during at least one past time interval;

storing in a rule base, a plurality of rules that determine whether a characteristic of a sample is to be data collected and, if so, that identify the characteristic which is to be data collected, based on values of characteristics of samples;

30 applying the plurality of rules to the plurality of past values that are stored in the rule base to identify target samples to be data collected from the plurality of samples and to identify at least one target characteristic to be data collected for the target samples that are identified; and

generating user instructions to collect data for the at least one target characteristic to be data collected in the target samples to be data collected.

22. A method according to Claim 21 wherein the generating is followed
5 by:

accepting user input of at least one value of the at least one target characteristic to be data collected in the target samples to be data collected; and

storing in the database, the at least one target value of the at least one target characteristic to be data collected in the target samples to be data collected.

10

23. A method according to Claim 22 wherein the applying, generating, accepting and storing the at least one value are repeatedly performed in sequence during a plurality of time intervals.

24. A method according to Claim 21 wherein the plurality of rules include
15 a rule that begins or terminates data collection of a characteristic in a sample based on a percentage of the samples having a value of the characteristic during a past time interval.

25. A method according to Claim 21 wherein the plurality of rules include
20 a rule that begins or terminates data collection of a first characteristic in a sample based on a percentage of the samples having a value of a second characteristic during a past time interval.

26. A method according to Claim 21 wherein the plurality of rules include
25 a rule that begins or terminates data collection of a characteristic in a sample based on a percentage of the samples failing to have the characteristic during a past time interval.

27. A method according to Claim 21 wherein the plurality of rules include
30 a rule that begins or terminates data collection of a first characteristic in a sample based on a percentage of the samples failing to have a second characteristic during a past time interval.

28. A method according to Claim 21 wherein the plurality of samples are contained in a plurality of arrays of samples, and wherein the plurality of rules include a rule that begins or terminates data collection of a characteristic in a sample based on a percentage of the samples in the array that includes the sample having a value of the characteristic during a past time interval.

29. A method according to Claim 21 wherein the plurality of samples are contained in a plurality of arrays of samples, and wherein the plurality of rules include a rule that begins or terminates data collection of a first characteristic in a sample based on a percentage of the samples in the array that includes the sample having a value of a second characteristic during a past time interval.

30. A method according to Claim 21 wherein the plurality of samples are contained in a plurality of arrays of samples, and wherein the plurality of rules include a rule that begins or terminates data collection of a characteristic in a sample based on a percentage of the samples in the array that includes the sample failing to have the characteristic during a past time interval.

31. A method according to Claim 21 wherein the plurality of samples are contained in a plurality of arrays of samples, and wherein the plurality of rules include a rule that begins or terminates data collection of a first characteristic in a sample based on a percentage of the samples in the array that includes the sample failing to have a second characteristic during a past time interval.

32. A method according to Claim 21 wherein the plurality of samples are contained in an array of containers that are arranged in a container spatial relationship, and wherein the generating comprises:

displaying a matrix of cells in a cell spatial relationship that corresponds to the container spatial relationship; and
accepting user input into at least one of the cells of the matrix that is displayed, of at least one value of at least one of the target characteristic to be data collected for at least one of the target samples to be data collected that corresponds to the at least one of the cells in the matrix that is displayed.

33. A method according to Claim 32 wherein the plurality of samples are contained in a plurality of arrays of containers and wherein the displaying is preceded by

5 accepting user selection of an array of containers from the plurality of arrays of containers.

34. A method according to Claim 32 wherein the displaying is preceded by:

10 accepting user selection of a target characteristic from the characteristics that change over time; and

wherein the displaying comprises displaying a matrix of cells in a cell spatial relationship that corresponds to the container spatial relationship and that includes data entry parameters for the target characteristic that was selected.

15 35. A method according to Claim 32:

wherein the accepting user input comprises accepting user input of a default value of the at least one of the target characteristics for the cells of the matrix that is displayed, and accepting user input into at least one of the cells of the matrix that is displayed, of at least one value that is different from the default value.

20 36. A method according to Claim 32 wherein the following is performed between the accepting and the storing:

25 accepting user input into at least one of the cells of the matrix that is displayed, of at least one corrected value of at least one of the target characteristics for at least one of the target samples to be data collected that corresponds to the at least one of the cells in the matrix that is displayed.

30 37. A system for collecting data about a plurality of samples that possess characteristics that change over time, the samples being contained in an array of containers that are arranged in a container spatial relationship, the system comprising:

means for displaying a matrix of cells in a cell spatial relationship that corresponds to the container spatial relationship; and

means for accepting user input into at least one of the cells of the matrix that is displayed, of at least one value of at least one of the characteristics that change over

time for at least one of the samples that corresponds to the at least one of the cells in the matrix that is displayed.

38. A system according to Claim 37 further comprising:
5 means for storing in a database, the at least one value of the at least one of the characteristics that change over time for the at least one of the samples.

39. A system according to Claim 37 wherein the array of containers
includes a plurality of rows and columns of containers in a container spatial
10 relationship and wherein the matrix of cells includes a corresponding plurality of rows and columns of cells in a cell spatial relationship that corresponds to the container spatial relationship.

40. A system according to Claim 37 wherein the plurality of samples are
15 contained in a plurality of arrays of containers and wherein the system further comprises:
means for accepting user selection of an array of containers from the plurality of arrays of containers.

41. A system according to Claim 37 further comprising:
20 means for accepting user selection of a characteristic from the characteristics that change over time; and
wherein the means for displaying comprises means for displaying a matrix of cells in a cell spatial relationship that corresponds to the container spatial relationship
25 and that includes data entry parameters for the characteristic that was selected.

42. A system according to Claim 41 wherein the data entry parameters
comprise at least one of a yes/no selection, a data entry box and a pull down menu of selection options.

43. A system according to Claim 41 further comprising means for
30 displaying user instructions for obtaining a value of the characteristic that was selected.

44. A system according to Claim 37:

wherein the means for accepting user input comprises means for accepting user input of a default value of the at least one of the characteristics for the cells of the matrix that is displayed, and means for accepting user input into at least one of the
5 cells of the matrix that is displayed, of at least one value that is different from the default value.

45. A system according to Claim 38:

wherein the means for accepting user input comprises means for accepting
10 user input of a default value of the at least one of the characteristics for the cells of the matrix that is displayed, and means for accepting user input into at least one of the cells of the matrix that is displayed of at least one value that is different from the default value; and

wherein the means for storing comprises means for storing in the database, the
15 default value for the cells of the matrix except for the at least one of the cells in which the at least one value that is different from the default value was accepted, and means for storing in the database, the at least one value for the at least one of the cells.

46. A system according to Claim 38 further comprising:

20 means for accepting user input into at least one of the cells of the matrix that is displayed, of at least one corrected value of at least one of the characteristics that change over time for at least one of the samples that corresponds to the at least one of the cells in the matrix that is displayed.

25 47. A system according to Claim 37 wherein the means for displaying and the means for accepting are repeatedly activated to collect data for a plurality of matrices of cells that correspond to a plurality of arrays of containers.

30 48. A system according to Claim 37 wherein the means for displaying and the means for accepting are repeatedly activated to collect data for a plurality of the characteristics that change over time.

49. A system according to Claim 37 wherein the means for displaying and the means for accepting are repeatedly activated to collect data over a plurality of sequential time intervals.

5 50. A system according to Claim 39 further comprising:
means for storing in a database, a plurality of past values of the characteristics of the plurality of samples that were data collected during at least one past time interval;

10 means for storing in a rule base, a plurality of rules that determine whether a characteristic of a sample is to be data collected and, if so, that identify the characteristic which is to be data collected, based on values of characteristics of samples;

15 means for applying the plurality of rules to the plurality of past values that are stored in the rule base to identify target samples to be data collected from the plurality of samples and to identify at least one target characteristic to be data collected for the target samples that are identified; and

20 wherein the means for displaying comprises means for displaying the matrix of cells for the at least one target characteristic to be data collected in the target samples to be data collected.

25 51. A system according to Claim 50 further comprising:
means for accepting user input of at least one value of the at least one target characteristic to be data collected in the target samples to be data collected; and
means for storing in the database, the at least one target value of the at least one target characteristic to be data collected in the target samples to be data collected.

30 52. A system according to Claim 51 wherein the means for applying, the means for displaying, the means for accepting and the means for storing the at least one value are repeatedly activated in sequence during a plurality of time intervals.

53. A system according to Claim 50 wherein the plurality of rules include a rule that begins or terminates data collection of a characteristic in a sample based on a percentage of the samples having a value of the characteristic during a past time interval.

54. A system according to Claim 50 wherein the plurality of rules include a rule that begins or terminates data collection of a first characteristic in a sample based on a percentage of the samples having a value of a second characteristic during
5 a past time interval.

55. A system according to Claim 50 wherein the plurality of rules include a rule that begins or terminates data collection of a characteristic in a sample based on a percentage of the samples failing to have the characteristic during a past time
10 interval.

56. A system according to Claim 50 wherein the plurality of rules include a rule that begins or terminates data collection of a first characteristic in a sample based on a percentage of the samples failing to have a second characteristic during a
15 past time interval.

57. A system for scheduling data collection of characteristics of a plurality of samples, wherein values of the characteristics change over time, the system comprising:

20 means for storing in a database, a plurality of past values of the characteristics of the plurality of samples that were data collected during at least one past time interval;

means for storing in a rule base, a plurality of rules that determine whether a characteristic of a sample is to be data collected and, if so, that identify the
25 characteristic which is to be data collected, based on values of characteristics of samples;

means for applying the plurality of rules to the plurality of past values that are stored in the rule base to identify target samples to be data collected from the plurality of samples and to identify at least one target characteristic to be data collected for the
30 target samples that are identified; and

means for generating user instructions to collect data for the at least one target characteristic to be data collected in the target samples to be data collected.

58. A system according to Claim 57 further comprising:

means for accepting user input of at least one value of the at least one target characteristic to be data collected in the target samples to be data collected; and

means for storing in the database, the at least one target value of the at least one target characteristic to be data collected in the target samples to be data collected.

5

59. A system according to Claim 58 wherein the means for applying, the means for generating, the means for accepting and the means for storing the at least one value are repeatedly activated in sequence during a plurality of time intervals.

10

60. A system according to Claim 57 wherein the plurality of rules include a rule that begins or terminates data collection of a characteristic in a sample based on a percentage of the samples having a value of the characteristic during a past time interval.

15

61. A system according to Claim 57 wherein the plurality of rules include a rule that begins or terminates data collection of a first characteristic in a sample based on a percentage of the samples having a value of a second characteristic during a past time interval.

20

62. A system according to Claim 57 wherein the plurality of rules include a rule that begins or terminates data collection of a characteristic in a sample based on a percentage of the samples failing to have the characteristic during a past time interval.

25

63. A system according to Claim 57 wherein the plurality of rules include a rule that begins or terminates data collection of a first characteristic in a sample based on a percentage of the samples failing to have a second characteristic during a past time interval.

30

64. A system according to Claim 57 wherein the plurality of samples are contained in a plurality of arrays of samples, and wherein the plurality of rules include a rule that begins or terminates data collection of a characteristic in a sample based on a percentage of the samples in the array that includes the sample having a value of the characteristic during a past time interval.

65. A system according to Claim 57 wherein the plurality of samples are contained in a plurality of arrays of samples, and wherein the plurality of rules include a rule that begins or terminates data collection of a first characteristic in a sample based on a percentage of the samples in the array that includes the sample having a value of a second characteristic during a past time interval.

66. A system according to Claim 57 wherein the plurality of samples are contained in a plurality of arrays of samples, and wherein the plurality of rules include a rule that begins or terminates data collection of a characteristic in a sample based on a percentage of the samples in the array that includes the sample failing to have the characteristic during a past time interval.

67. A system according to Claim 57 wherein the plurality of samples are contained in a plurality of arrays of samples, and wherein the plurality of rules include a rule that begins or terminates data collection of a first characteristic in a sample based on a percentage of the samples in the array that includes the sample failing to have a second characteristic during a past time interval.

68. A system according to Claim 57 wherein the plurality of samples are contained in an array of containers that are arranged in a container spatial relationship, and wherein the means for generating comprises:

means for displaying a matrix of cells in a cell spatial relationship that corresponds to the container spatial relationship; and

means for accepting user input into at least one of the cells of the matrix that is displayed, of at least one value of at least one of the target characteristic to be data collected for at least one of the target samples to be data collected that corresponds to the at least one of the cells in the matrix that is displayed.

69. A system according to Claim 68 wherein the plurality of samples are contained in a plurality of arrays of containers and wherein the system further comprises:

means for accepting user selection of an array of containers from the plurality of arrays of containers.

70. A system according to Claim 68 further comprising:
means for accepting user selection of a target characteristic from the
characteristics that change over time; and

5 wherein the means for displaying comprises means for displaying a matrix of
cells in a cell spatial relationship that corresponds to the container spatial relationship
and that includes data entry parameters for the target characteristic that was selected.

71. A system according to Claim 68:
10 wherein the means for accepting user input comprises means for accepting
user input of a default value of the at least one of the target characteristics for the cells
of the matrix that is displayed, and means for accepting user input into at least one of
the cells of the matrix that is displayed, of at least one value that is different from the
default value.

15 72. A system according to Claim 68 further comprising:
means for accepting user input into at least one of the cells of the matrix that is
displayed, of at least one corrected value of at least one of the target characteristics for
at least one of the target samples to be data collected that corresponds to the at least
20 one of the cells in the matrix that is displayed.

73. A computer program product that collects data about a plurality of
samples that possess characteristics that change over time, the samples being
contained in an array of containers that are arranged in a container spatial relationship,
25 the computer program product comprising a computer usable storage medium having
computer-readable program code embodied in the medium, the computer-readable
program code comprising:

computer-readable program code that is configured to display a matrix of cells
in a cell spatial relationship that corresponds to the container spatial relationship; and
30 computer-readable program code that is configured to accept user input into at
least one of the cells of the matrix that is displayed, of at least one value of at least
one of the characteristics that change over time for at least one of the samples that
corresponds to the at least one of the cells in the matrix that is displayed.

74. A computer program product according to Claim 73 further comprising:

computer-readable program code that is configured to store in a database, the at least one value of the at least one of the characteristics that change over time for the at least one of the samples.

75. A computer program product according to Claim 73 wherein the array of containers includes a plurality of rows and columns of containers in a container spatial relationship and wherein the matrix of cells includes a corresponding plurality of rows and columns of cells in a cell spatial relationship that corresponds to the container spatial relationship.

76. A computer program product according to Claim 73 wherein the plurality of samples are contained in a plurality of arrays of containers and wherein the computer program product further comprises:

computer-readable program code that is configured to accept user selection of an array of containers from the plurality of arrays of containers.

77. A computer program product according to Claim 73 further comprising:

computer-readable program code that is configured to accept user selection of a characteristic from the characteristics that change over time; and

wherein the computer-readable program code that is configured to display comprises computer-readable program code that is configured to display a matrix of cells in a cell spatial relationship that corresponds to the container spatial relationship and that includes data entry parameters for the characteristic that was selected.

78. A computer program product according to Claim 77 wherein the data entry parameters comprise at least one of a yes/no selection, a data entry box and a pull down menu of selection options.

79. A computer program product according to Claim 77 further comprising:

computer-readable program code that is configured to display user instructions for obtaining a value of the characteristic that was selected.

80. A computer program according to Claim 73:

5 wherein the computer-readable program code that is configured to accept user input comprises computer-readable program code that is configured to accept user input of a default value of the at least one of the characteristics for the cells of the matrix that is displayed, and computer-readable program code that is configured to accept user input into at least one of the cells of the matrix that is displayed, of at least
10 one value that is different from the default value.

81. A computer program product according to Claim 74:

wherein the computer-readable program code that is configured to accept user input comprises computer-readable program code that is configured to accept user
15 input of a default value of the at least one of the characteristics for the cells of the matrix that is displayed, and computer-readable program code that is configured to accept user input into at least one of the cells of the matrix that is displayed of at least one value that is different from the default value; and

wherein the computer-readable program code that is configured to store
20 comprises computer-readable program code that is configured to store in the database, the default value for the cells of the matrix except for the at least one of the cells in which the at least one value that is different from the default value was accepted, and computer-readable program code that is configured to store in the database, the at least one value for the at least one of the cells.

25

82. A computer program product according to Claim 74 further comprising:

computer-readable program code that is configured to accept user input into at least one of the cells of the matrix that is displayed, of at least one corrected value of
30 at least one of the characteristics that change over time for at least one of the samples that corresponds to the at least one of the cells in the matrix that is displayed.

83. A computer program product according to Claim 73 wherein the computer-readable program code that is configured to display and computer-readable

program code that is configured to accept are repeatedly activated to collect data for a plurality of matrices of cells that correspond to a plurality of arrays of containers.

84. A computer program product according to Claim 73 wherein the
5 computer-readable program code that is configured to display and the computer-readable program code that is configured to accept are repeatedly activated to collect data for a plurality of the characteristics that change over time.

85. A computer program product according to Claim 73 wherein the
10 computer-readable program code that is configured to display and the computer-readable program code that is configured to accept are repeatedly activated to collect data over a plurality of sequential time intervals.

86. A computer program product according to Claim 73 further
15 comprising:
computer-readable program code that is configured to store in a database, a plurality of past values of the characteristics of the plurality of samples that were data collected during at least one past time interval;

computer-readable program code that is configured to store in a rule base, a
20 plurality of rules that determine whether a characteristic of a sample is to be data collected and, if so, that identify the characteristic which is to be data collected, based on values of characteristics of samples;

computer-readable program code that is configured to apply the plurality of
rules to the plurality of past values that are stored in the rule base to identify target
25 samples to be data collected from the plurality of samples and to identify at least one target characteristic to be data collected for the target samples that are identified; and

wherein the computer-readable program code that is configured to display
comprises computer-readable program code that is configured to display the matrix of
cells for the at least one target characteristic to be data collected in the target samples
30 to be data collected.

87. A computer program product according to Claim 86 further
comprising:

computer-readable program code that is configured to accept user input of at least one value of the at least one target characteristic to be data collected in the target samples to be data collected; and

computer-readable program code that is configured to store in the database,
5 the at least one target value of the at least one target characteristic to be data collected in the target samples to be data collected.

88. A computer program product according to Claim 87 wherein the
computer-readable program code that is configured to apply, the computer-readable
10 program code that is configured to display, the computer-readable program code that is configured to accept and the computer-readable program code that is configured to store the at least one value are repeatedly activated in sequence during a plurality of time intervals.

89. A computer program product according to Claim 86 wherein the
plurality of rules include a rule that begins or terminates data collection of a
characteristic in a sample based on a percentage of the samples having a value of the
characteristic during a past time interval.

90. A computer program product according to Claim 86 wherein the
plurality of rules include a rule that begins or terminates data collection of a first
characteristic in a sample based on a percentage of the samples having a value of a
second characteristic during a past time interval.

91. A computer program product according to Claim 86 wherein the
plurality of rules include a rule that begins or terminates data collection of a
characteristic in a sample based on a percentage of the samples failing to have the
characteristic during a past time interval.

92. A computer program product according to Claim 86 wherein the
plurality of rules include a rule that begins or terminates data collection of a first
characteristic in a sample based on a percentage of the samples failing to have a
second characteristic during a past time interval.

93. A computer program product that schedules data collection of characteristics of a plurality of samples, wherein values of the characteristics change over time, the computer program product comprising a computer usable storage medium having computer-readable program code embodied in the medium, the
5 computer-readable program code comprising:

computer-readable program code that is configured to store in a database, a plurality of past values of the characteristics of the plurality of samples that were data collected during at least one past time interval;

10 computer-readable program code that is configured to store in a rule base, a plurality of rules that determine whether a characteristic of a sample is to be data collected and, if so, that identify the characteristic which is to be data collected, based on values of characteristics of samples;

15 computer-readable program code that is configured to apply the plurality of rules to the plurality of past values that are stored in the rule base to identify target samples to be data collected from the plurality of samples and to identify at least one target characteristic to be data collected for the target samples that are identified; and

20 computer-readable program code that is configured to generate user instructions to collect data for the at least one target characteristic to be data collected in the target samples to be data collected.

94. A computer program product according to Claim 93 further comprising:

25 computer-readable program code that is configured to accept user input of at least one value of the at least one target characteristic to be data collected in the target samples to be data collected; and

computer-readable program code that is configured to store in the database, the at least one target value of the at least one target characteristic to be data collected in the target samples to be data collected.

30 95. A computer program product according to Claim 94 wherein the computer-readable program code that is configured to apply, the computer-readable program code that is configured to generate, the computer-readable program code that is configured to accept and the computer-readable program code that is configured to

store the at least one value are repeatedly activated in sequence during a plurality of time intervals.

96. A computer program product according to Claim 93 wherein the
5 plurality of rules include a rule that begins or terminates data collection of a characteristic in a sample based on a percentage of the samples having a value of the characteristic during a past time interval.

97. A computer program product according to Claim 93 wherein the
10 plurality of rules include a rule that begins or terminates data collection of a first characteristic in a sample based on a percentage of the samples having a value of a second characteristic during a past time interval.

98. A computer program product according to Claim 93 wherein the
15 plurality of rules include a rule that begins or terminates data collection of a characteristic in a sample based on a percentage of the samples failing to have the characteristic during a past time interval.

99. A computer program product according to Claim 93 wherein the
20 plurality of rules include a rule that begins or terminates data collection of a first characteristic in a sample based on a percentage of the samples failing to have a second characteristic during a past time interval.

100. A computer program product according to Claim 93 wherein the
25 plurality of samples are contained in a plurality of arrays of samples, and wherein the plurality of rules include a rule that begins or terminates data collection of a characteristic in a sample based on a percentage of the samples in the array that includes the sample having a value of the characteristic during a past time interval.

101. A computer program product according to Claim 93 wherein the
30 plurality of samples are contained in a plurality of arrays of samples, and wherein the plurality of rules include a rule that begins or terminates data collection of a first characteristic in a sample based on a percentage of the samples in the array that

includes the sample having a value of a second characteristic during a past time interval.

102. A computer program product according to Claim 93 wherein the
5 plurality of samples are contained in a plurality of arrays of samples, and wherein the plurality of rules include a rule that begins or terminates data collection of a characteristic in a sample based on a percentage of the samples in the array that includes the sample failing to have the characteristic during a past time interval.

10 103. A computer program product according to Claim 93 wherein the plurality of samples are contained in a plurality of arrays of samples, and wherein the plurality of rules include a rule that begins or terminates data collection of a first characteristic in a sample based on a percentage of the samples in the array that includes the sample failing to have a second characteristic during a past time interval.

15 104. A computer program product according to Claim 93 wherein the plurality of samples are contained in an array of containers that are arranged in a container spatial relationship, and wherein the computer-readable program code that is configured to generate comprises:

20 computer-readable program code that is configured to display a matrix of cells in a cell spatial relationship that corresponds to the container spatial relationship; and
computer-readable program code that is configured to accept user input into at least one of the cells of the matrix that is displayed, of at least one value of at least one of the target characteristic to be data collected for at least one of the target
25 samples to be data collected that corresponds to the at least one of the cells in the matrix that is displayed.

105. A computer program product according to Claim 104 wherein the plurality of samples are contained in a plurality of arrays of containers and wherein
30 the computer program product further comprises:

computer-readable program code that is configured to accept user selection of an array of containers from the plurality of arrays of containers.

106. A computer program product according to Claim 104 further comprising:

computer-readable program code that is configured to accept user selection of a target characteristic from the characteristics that change over time; and

5 wherein the computer-readable program code that is configured to display comprises computer-readable program code that is configured to display a matrix of cells in a cell spatial relationship that corresponds to the container spatial relationship and that includes data entry parameters for the target characteristic that was selected.

10 107. A computer program product according to Claim 104:

wherein the computer-readable program code that is configured to accept user input comprises computer-readable program code that is configured to accept user input of a default value of the at least one of the target characteristics for the cells of the matrix that is displayed, and computer-readable program code that is configured to
15 accept user input into at least one of the cells of the matrix that is displayed, of at least one value that is different from the default value.

108. A computer program product according to Claim 104 further comprising:

20 computer-readable program code that is configured to accept user input into at least one of the cells of the matrix that is displayed, of at least one corrected value of at least one of the target characteristics for at least one of the target samples to be data collected that corresponds to the at least one of the cells in the matrix that is displayed.

25